# Turner & Co., Inc.

**STUART A. TURNER**
5903 Kilawea Dr.
West Richland, WA 99353

Phone: (509) 967-0460
Fax: (509) 967-5865
Mobile: (509) 539-5524
E-mail: agforensic@aol.com

July 29, 2010

On Behalf of:
Pesticide Poisioning Victims United
Intended for Submission as formal comment to EPA

Re: Petition Comment of Attorney Peter L. Gray, Representing the SDTF Pesticide Manufacturers

To: Jill Bloom, Pesticide Re-Evaluation Division, OPP, US EPA:

I have been asked to review and comment on the letter of Mr. Gray, the attorney representing the SDTF, sent to Jill Bloom of EPA on June 16, 2010 as formal comment on your pending petition. Below I will do so in very abbreviated manner, beginning with the listing of statements I agree with, and concluding with comments with which I disagree in some manner, along with an explanation of why.

Points of General Agreement

Mr. Gray is a formal advocate on behalf of his clients, the 38 (initial members, now 42) pesticide manufacturers who with EPA blessing established and funded the Spray Drift Task Force (SDTF) beginning in 1990. They did so because of EPA requirements not met for data relating to spray drift, in order to meet registration requirements of all of the approximately 2,000 existing, and anticipated future (new) pesticide products.

I do not share a deep suspicion of the data based on who paid for, designed, managed and performed the actual work. I can understand why others would not be so trusting of pesticide companies, a review of the 1.5 BILLION dollar claims handled by DuPont relating to their mishandling of a defective product (Benalate) provides a myriad of sordid details showing the potential abuses of this type. In that case the pesticide company was fined a record $125 MILLION DOLLARS by a Federal Judge for lying to the court, concealing and altering documents, etc. This was appealed all the way to the US Supreme Court, where it was upheld, forcing DuPont to pay not only the full $125 Million fine, but millions more in interest as well. The industry has, like all businesses, good and bad people, and has at times acted with both honor and dishonor, a record of which is clear through a review of litigation of civil claims over the past 50 years.

I agree with Mr. Gray that the "topographic features and microclimate" of Oregon are unique, and could not be more dissimilar from the two test sites in Texas. The test sites in Texas were

specifically selected because they "provided open expanses, up to one half mile downwind"(1) from the spray test sites. In fact, both of the test sites had no topographic relief - they were essentially flat. This is in very strong contrast to the slopes typically treated in the Oregon Coast range, which range from 20 to over 70% in slope and frequently average over 45 degrees. In addition to the slope, they have large elevation changes, sometimes in excess of 1,000 total vertical feet within a treatment block, again, completely different from the Texas SDTF test sites.

Mr. Gray also emphasizes the multi-agency nature of the SDTF, and the subsequent 1994 CRADA agreement which led to the development of a computerized spray drift known as AgDRIFT. I also concur in general with him that this is widely used and considered the most current computer model for drift analysis.

General and Specific Points of Disagreement

The general thesis of Mr. Gray's June 16 letter, as an advocate on behalf of the 42 manufacturers of pesticides affiliated with the SDTF, is that the data generated from that experimental work, and subsequent development of the AgDRIFT model can be unilaterally and fully applied to the application conditions, terrain, microclimate and application methods at use by timber interests in the Central Coast Range of Oregon.

I could not disagree more with this entire thesis, and especially with the entire concept that the SDTF data, and subsequent computer model are complete, and unassailable science which settles all questions raised by the petitions in this instance.

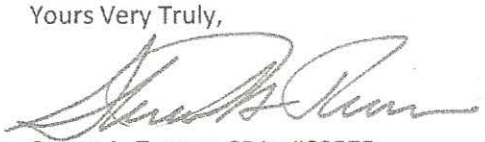
1. The SDTF test data is what it is - a very tiny set of data, especially in relation to the literature reviewed of prior test data (over 2,500 drift studies). Many of these studies used more advanced techniques in terms of characterizing spray droplets - for example the wind tunnel work at UCD with the Malvern laser slaved to a computer.
2. The SDTF used collection "cards" to evaluate downwind movement of spray particles, made of a material similar to blotting paper. There are a number of highly credible studies which have shown pesticide movement of up to 22 miles, so only testing with cards out to a half mile exposes one of the serious shortcomings in the SDTF data. Other testing has shown that spraying tests of actual herbicides, and utilizing either air pump and carbon/rosin traps, or bio indicators (example, using potted or flats of sensitive species like peas, cotton) allow detection at many times the distance of card type testing. This compromises and devalues the SDTF data, which provides much of the scientific basis for the computer model (AgDRIFT).
3. Computer models are used because they are cheap and can be easily manipulated and changed. However, they are simply estimation models, and are only as good as the data entered and considered in the actual model calculations. Since we know that neither the model nor the basic data is premised on, the SDTF material consider the dominating effect of topography/terrain/elevation changes, we cannot consider that there is any scientific validity to the application of the SDTF data or the AgDrift model to the issues at hand in the Central Coastal Range of Oregon. The PNNL study submitted by Kevin Kohlman, while lengthy and detailed, does an excellent job of explaining the critical importance of local weather and topography in long distance (20+ miles) pesticide off target movement.
4. The primary aircraft used in the SDTF data was a fixed wing Cessna Ag Husky flying at 110 mph forward airspeed. The applications at issue are with different nozzles affixed to rotary aircraft (helicopters). Even a lay person can easily understand that there is a world of difference between the two. Again this seriously compromises the efforts of Mr. Gray as an advocate on behalf o the SDTF to utilize this data and contend as an advocate for the SDTF that this data, and the AgDRIFT model have

any reasonable scientific application to the issues in this petition. Some of the SDTF data came from another, larger fixed wing aircraft, the Air Tractor 401, again not a comparable application technique.
5. SDTF data is an extremely narrow base on which to regulate all 2,000+ pesticides despite the assertions to the contrary by Mr. Gray. A total of 90 test runs (45 runs, two replications each) and 90 "control" applications were made during the multi-million (reportedly nearly $20 million) dollar SDTF research program. To give you some perspective, that is the equivalent of number of spray runs necessary to cover about two, 100 acre circle pivot fields . Since the average aerial applicator flies over 10,000 acres a year, and there are here in the Pacific Northwest more than one hundred of them, you can easily see that the SDTF data represents a tiny fraction of just one year's aerial application locally.
6. Because of the limitations inherent in the SDFT data, when combined with the "estimation" factors built into the AgDrift computer model, the latter is of extremely limited use by anyone interested in scientifically quantifying the real drift potential from forestry applications of herbicides by helicopter in the Oregon Coast Range. Not only is the data base to limited to start with, the overriding, dominant effects of the local topography make moot the model, since it does not contain any mechanism to estimate these effects on drift and off target movement.
7. Where data is useful, (albeit limited) the SDTF data tells us that the typical release height for aerial applications in forestry work (25'+)is a multiple of the typical crop site job (8' on average) the SDTF data shows that just the shift (from 8' to 25' release height) in this factor alone results in 2.5 times as much off target drift. Maximum test release height in the SDTF data was 31'; we have sworn testimony and both video and still photos showing helicopters spraying in the Oregon Coast Range at heights from 60-100+ feet. Obviously, this is another reason the SDTF data is of no real relevance to the discussion at hand. The mentions by Mr. Gray of the adequacy of current buffer zones for the forestry work in Oregon is not then supported by this evidence.
8. SDTF data was primarily obtained over short (6") grass, with a limited amount of data from test runs over cotton (2.5-3'). There was no data generated where large trees are present; since air is a fluid medium it must flow up and over all obstacles, so testing where either trees or artificial barriers of a similar nature would have been illuminating if utilized by the SDTF, but they were not. Another strike against the attempted application of this data to the issues at hand. Air flowing over and around large obstacles like trees create updrafts, sidedrafts, downdrafts all of which keep droplets suspended for much longer periods of time. While so suspended, they are subject to evaporation, which makes them smaller still, resulting in much greater potential for mid or long distance transport.
9. The SDTF data utilized for testing purposes a dye, rather than actual herbicides or other pesticides. We know that it takes a certain critical mass - concentration of molecules of this dye to be detected. On the other hand, we know that one or a few molecules of extremely active, Sulfonylurea herbicides will cause a serious adverse effect on sensitive plant species. These products are typically utilized on crops where labeled at .1-3 oz/acre of formulated product. One product most frequently sprayed in Oregon on Coastal Range timber tracts is Sulfometuron-Methyl, trade name OUST. This material is so deadly to both grass and broadleaf species it has no labeled crop uses. Yet it is frequently applied at high rates, in combination with other herbicides also at rates a multiple of what is commonly sprayed on crop ground. Therefore, the spray mixture itself is much more lethal, but orders of magnitude, making the necessity of logarithmically larger buffer zones a necessary requirement. Another herbicide commonly used, Triclopyr in the Garlon 4 formulation, is highly toxic to salmon which inhabit the many named and unnamed streams which occur in and adjacent to these forestry spray areas. Despite their listing for some species (Coho) as Endangered under the ESA, there has been no effort to provide them even a modest amount of protection from these applications. This clearly is a subject ripe for litigation under the ESA or Clean Water Act unless EPA steps in as a regulatory force and expands buffer zones on a mandatory basis; this can be done by specific county by county label basis, or by the State of Oregon under their regulatory scheme.

10. The discussion by Mr. Gray did not include post application (non drift) movement of herbicides by either air -volatility - or by water runoff from treated areas. The establishment of expanded buffer zones around treated areas would provide additional benefits going far beyond drift issues, and extending into clean water and salmon issues as an important side benefit to the environment overall.

I remain strongly supportive of the continued use of these valued herbicides by private landowners, timber companies, and on public lands. There is no doubt in my mind that most of the operators, land managers and foresters are good, well intentioned people who are simply unaware of the true nature of the high potential for off target movement related to the current herbicide application programs. My only concerns relate to the absolute necessity to keep these extremely biologically active compounds, applied at ultra high rates on, and only on, and remaining on the desired target sites. With currently available technology, terrain, nozzle, aircraft , and weather factors known to exist in the petition area, without changes to product labeling and or enforced regulations,to restrict uses significantly beyond current label and practice, we can be assured only on continued trespass by these materials off the desired site. All the environmental data generated in support of these herbicide labels presumes as a basic premise, that they will be used strictly as intended, and remain in the target zone when correctly applied. There is a dearth of data, indeed a scientific "black hole" of data that would be required if we were to attempt to fully examine the complete biological and environmental effects of these materials under all off site movement scenarios, both with application related losses (drift) and post application movement. However, it would not be a difficult task to perform some basic research in situ to scientifically clarify the amount and means of off target movement during and after application. This would be the preferable route, to have actual data to base new labels or regulations on. Until we have actual test data fairly representing actual losses during and following applications under the most unusual conditions found in your limited geographic area, it seems prudent to expand buffer zones and other application related restrictions to insure environmental safety and compliance associated with timber forestry applications.

Yours Very Truly,



Stuart A. Turner, CPAg #02575
Turner & Co., Inc.

(1) USDA/USFS Publication # FHET-0302 Aerial Application Equipment Guide 2003; Appendix A3, page 170.